REMARKS

Reconsideration and allowance are requested in view of the following information and discussion.

I. Election/Restriction

Applicants note that the Examiner has made final his previous requirement under 35 U.S.C. 121 that applicants elect "a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable".

In their response to that requirement, applicants elected, with traverse, the species identified in Claim 21 as "a free-radical initiator." Applicants confirm that election.

II. Claim Interpretation

On page 2 of the Office Action in regard to Claim 11, the Examiner has assumed that any unsaturated polyester usable in a coating composition, as recited in Claim 1, would possess an acid number of less than 50. However, the Examiner has not provided any facts or other basis for that assumption.

In response, applicants state that Claim 11 defines a specific embodiment of this invention.

On pages 2-3 of the Office Action in regard to Claims 17-20, the Examiner states that the recitation of "up to about" does not require the presence of the constituent defined in those claims.

In response, applicants state Claims 17-20 define constituents which are optional in the compositions of this invention; refer to page 9 of the present specification.

III. The Rejections Under Section 112

A. Under 35 U.S.C. 112, first paragraph, the Examiner has rejected Claims 7 and 10 as failing to comply with the enablement requirement. This rejection is traversed in view of the following discussion.

The Examiner states that the recitations of "analogues of such monomers" are not proper since analogues are compounds having similar electronic structures but different atoms. The Examiner further states:

> "To determine what analogues might be usable, without interfering with the proposed use of the composition, would require the undue burden of experimentation."

Applicants maintain that the Examiner's position is not tenable. As required by Section 112, first paragraph, Claims 7 and 10 contain such full, clear, concise and exact terms as to enable any person skilled in this art to make and use this invention.

In the first instance, as shown on page 74 of The Random House Dictionary of the English Language, Second Edition – Unabridged, published in 1987 by Random House, Inc., the term "analogue" is defined as:

> "one of a group of chemical compounds similar in structure but different in respect to elemental composition".

Claims 7 and 10 do not refer generally to any analogues, but refer specifically to the analogues of those monomers identified in Claims 7 and 10. Applicants have stated their belief that these analogues are usable in the compositions of this invention. Therefore, contrary to the Examiner's statement, undue experimentation is not required.

Applicants submit that Claims 7 and 10 comply with Section 112, first paragraph, and request the removal of this rejection.

B. Under 35 U.S.C. 112, second paragraph, the Examiner has rejected Claims 1-21 and 25 as being indefinite for failing to particularly point out and claim the subject matter which applicant regards as the invention. This rejection is traversed in view of the following discussion.

(1) The Examiner states the recitations in Claims 1 and 25 of "contains low amounts of hazardous air pollutants" render these claims as vague and confusing.

In response, Claims 1 and 25 have been amended to recite "less than about 3 weight percent". Support for this amendment is found on page 3 of this specification.

(2) The Examiner further states that the phrase "hazardous air pollutants" is not an art-recognized phrase or a proper Markush group to which known members are easily ascribed.

In fact, hazardous air pollutants are defined by the U.S. Environmental Protection Agency. The following links define the original list by the EPA and provide access to other relevant documents in the U.S. Federal Register:

www.epa.gov/ttn/atw/188polls.html

www.epa.gov/ttn/oarpg/t3pfpr.html

Therefore, use of this phrase complies with the requirements of Section 112, second paragraph.

(3) The Examiner also states that the recitations in Claim 7 and 10 of "analogues of such monomers" are not proper since analogues are compounds having similar electronic structures but different atoms.

This rejection has been discussed above in regard to Section 112, first paragraph, and that discussion is applicable to this rejection. Therefore, applicants contend that use of this phrase is proper under Section 112, second paragraph.

(4) With reference to Claim 15, the Examiner further states that no sufficient antecedent basis exists in Claim 1 for the limitation "epoxy functionalized (meth)acrylate". In response, Claim 15 has been amended to depend from Claim 14.

Based upon the above discussion and amendments, applicants submit that the rejections under Section 112 have been overcome and should be removed.

IV. Double Patenting

The Examiner has provisionally rejected Claims 1-21 and 25 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-24 of copending U.S. Application Serial No. 10/440,610. The Examiner acknowledges that, although the conflicting claims are not identical, they are not patentably distinct from each other because the particular unsaturated polyester of the copending application is embraced by the recitations in the claims of the present application.

The present Serial No. 10/789,245 is commonly owned with the copending Serial No. 10/440,610. However, as this is a provisional obviousness-type double patenting rejection, applicants will provide a more complete response when the conflicting claims of copending Serial No. 10/440,610 are indicated as patentable.

V. The Rejection Under Section 102

Under 35 U.S.C. 102(e), the Examiner has rejected Claims 1-21 and 25 as being anticipated by Hewitt et al. U.S. Patent Application Publication No. 2004/0010061. This rejection is traversed in view of the following reasons.

The language of 35 U.S.C. § 102(e) states that:

> A person shall be entitled to a patent unless ---
>
> > (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except....

The interpretation of 102(e) is, without question, that **the denial of a patent requires that the reference teach applicants' invention as defined by the claims**. This requirement is also referred to as "anticipation", and the Courts have provided clear and unambiguous definitions in this area.

In *General Electric Company v. United States*, 572 F.2d 745, 768, 198 U.S.P.Q. 65, 85 (U.S. Court of Claims 1978), a case involving Section 102(e), the Court states:

> **To anticipate a claim a prior reference must show each and every element claimed**. Short of this, anticipation does not exist. *In re Royka*, 490 F.2d 981, 984, 180 U.S.P.Q. 580, 583 (Cust. & Pat. App. 1974).
>
> (Emphasis added.)

In response, Claims 1 and 25 have been amended to recite that the unsaturated polyester is not derived from dicyclopentadiene. The unsaturated polyester in the Hewitt et al. publication is "a dicyclopentadiene-based unsaturated polyester".

Based upon this amendment to Claims 1 and 25, applicants request the withdrawal of this rejection under Section 102(e), as all of the limitations of Claims 1 and 25 are not expressly met by the Hewitt et al. publication.

VI. The Rejections Under Section 103

Section 103(a) requires that, if a patent is denied to an applicant, the differences between the subject matter sought to be patented and the prior art must be such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Section 103(a) further provides that patentability shall not be negatived by the manner in which the invention was made.

With regard to the requirements for a proper obviousness rejection under Section 103, applicants refer to the following decisions.

The Court of Appeals for the Federal Circuit states as follows in *In re Wright*, 6 U.S.P.Q.2d 1959, 1961 (CAFC 1988):

> We repeat the mandate of 35 U.S.C. § 103: it is the invention as a whole that must be considered in obviousness determinations. **The invention as a whole embraces the structure, its properties, and the problem it solves.**
>
> . . . The determination of whether a novel structure is or is not "obvious" **requires cognizance of the properties of that structure and the problem which it solves**, viewed in light of the teachings of the prior art.

> . . . (the particular problem facing the inventor **must be considered** in determining obviousness). . ..
>
> . . . (it is error to focus "solely on the product created, rather than on the obviousness or nonobviousness of its creation"). . ..
>
> (Emphasis added and citations omitted.)

In dealing with the concept of obviousness, the CAFC in the *Wright* case clearly states on pages 1961-2:

> Thus the question is whether what the inventor did would have been obvious to one of ordinary skill in the art **attempting to solve the problem upon which the inventor was working**.
>
> The problem solved by the invention is always relevant. The entirety of a claimed invention, including the combination viewed as a whole, the elements thereof, and the properties and purpose of the invention, must be considered.
>
> In either case, the requisite view of the whole invention mandates consideration of not only its structure but also its properties and **the problem solved**.
>
> (Emphasis added and citations omitted.)

Applicants maintain that, without knowledge or recognition of their problem, a patent cannot properly be asserted under the concept of obviousness. There must be at least a suggestion of applicants' problem for one having ordinary skill in this art to use a patent as a basis or starting point toward a solution to such problem.

This theory is not new, as shown by the Court of Customs and Patent Appeals in *In re Shaffer*, 108 U.S.P.Q.326, 329 (CCPA 1956):

> In fact, a person having the references before him **who was not cognizant** of appellant's disclosure would not be informed that the problem solved by
> appellant ever existed. **Therefore, can it be said that these references which never recognized appellant's problem would have suggested its solution. We think not**, and therefore feel that the references were improperly combined since there is no suggestion in either of the references that they can be combined to produce appellant's result.
>
> (Emphasis added.)

In support of their position of nonobviousness, applicants also refer to *In re Hortman*, 121 U.S.P.Q. 218 (CCPA 1959) wherein the Court states on page 219:

> For, though the structure may be but a simple expedient when the novel concept is realized, that structure may not be obvious to the skilled worker in the art where the **prior art has failed to suggest the problem or conceive of the idea for its elimination**.
>
> (Emphasis added.)

A. Under 35 U.S.C. 103(a), the Examiner has rejected Claims 1-11, 14-21 and 25 as being unpatentable over Jaworek et al. U.S. Patent No. 6,777,458. This rejection is traversed for the following reasons.

Applicants note that Claims 12-13 are not subject to this rejection.

The Jaworek patent is directed toward the production of scratch-resistant coatings on the basis of radiation-curable coating compositions. This objective is stated in the Jaworek patent at column 1, liens 4-6. The curing step is further defined at column 2, lines 51-56 of the Jaworek patent:

> ...curing the coating composition by exposure to UV radiation, which comprises conducting the curing of the coating composition under an oxygen-containing protective gas which has an oxygen partial pressure in the range of from 0.2 to 18 kPa.

Further, at column 3, lines 1-4, the Jaworek patent states:

> For the process of the invention all that is necessary is for the coating compositions to be subject to an oxygen concentration of less than 18 kPa in the region where curing takes place at the time of their exposure to UV radiation

Claim 1 of the Jaworek patent requires:

> ...curing said coating composition by exposure to UV radiation under an oxygen-containing protective gas which has an oxygen partial pressure in the range of from 0.5 to 18 kPa.

Without question, the Jaworek compositions require an oxygen depleted atmosphere for curing. Stated another way, the Jaworek compositions will not cure in an air atmosphere. (Air has 21 kPa of oxygen.)

To further define the compositions of the present invention, Claims 1 and 25 have been amended to recite that applicants' resin composition "is curable under an air atmosphere at ambient temperatures", as applicants' compositions do not require an inert (protective gas) or oxygen depleted atmosphere for curing. The support for this amendment is found on page 3 of this specification.

Simply stated, while perhaps appearing similar, the Jaworek compositions are quite different from the compositions of the present application.

The Examiner states on page 7 of the Office Action:

> "The skilled artisan would know to manipulate the resin components based thereon, and based upon the availability of resins, properties desired from each as a matter of inclusion and other factors."

Regardless of such "manipulation", the skilled artisan would be lead, in view of the clear teachings of Jaworek, to compositions which require curing in an oxygen depleted atmosphere, which applicants' compositions do not require. **The skilled artisan would be lead away from applicants' invention**.

Therefore, applicants request the withdrawal of this rejection under Section 103(a).

B. Under 35 U.S.C. 103(a), the Examiner has rejected Claims 1-11, 16-21 and 25 as being unpatentable over Boeckeler et al. U.S. Patent No. 5,369,139. This rejection is traversed for the following reasons.

Applicants note that Claims 12-15 are not subject to this rejection.

The standards and requirements for a proper rejection under Section 103(a) are discussed above and will be considered as repeated here.

The Boeckeler compositions require the presence of water, which is not an essential component of applicants' compositions. For example, column 1 of the Boeckeler patent states:

at lines 24-27: In order to render these relatively viscous oligomers suitable for application by conventional coatings techniques, they are diluted in low viscosity reactive monomers, such as....

at lines 31-35: Peroxide and radiation curable coatings suitable for roll coater or spray application usually contain 30-60 percent by weight of such reactive diluent monomers to achieve sufficiently low viscosities for application of a smooth film.

at lines 42-45: Such large amounts of reactive monomer generally result in a reduction in a cure rate, decrease in physical properties of the cured film, unpleasant order, and an increase in toxicity of the coating.

at lines 53-55: The replacement of reactive monomer with water offers a route to lower viscosity, reduced order, rapid cure and better film properties.

In the paragraph bridging columns 3-4, the Boeckler patent states:

The amount of water used in the emulsion can vary from about 10 percent to about 90 percent by weight of the total emulsified composition. Preferably, water is present in an amount of at least about 20 percent by weight and not in excess of about 60 percent by weight. More preferably, water is present in an amount between about 30 percent and 50 percent by weight. The less water which is present, the more quickly it can be removed from the deposited film.

As further emphasis that water is an essential component, Claim 1 of the Boeckeler patent requires the presence of "10 to about 60 wt. % water".

Claims 1 and 25 of the present application have been amended to recite "consisting essentially of" or "consists essentially of" to clearly emphasize that water is not an essential component of applicants' compositions.

On pages 8-9 of the Office Action, the Examiner states:

> "A skilled artisan would know how to manipulate the constituents for desired effects, resin availability, etc. As such, the instant claims are deemed to be obvious over the teachings of the reference."

To the contrary, applicants submit that the compositions of Boeckeler and applicants are patentably distinct as water is not an essential component of applicants' composition, but clearly is essential to the Boeckeler patent. Therefore, one having skill

in this art would not be lead from the Boeckeler patent to the compositions of the present application.

In view of the above discussion and amendment, applicants request the removal of this rejection under Section 103(a).

C. Under 35 U.S.C. 103(a), the Examiner has rejected Claims 1-21 and 25 as being unpatentable over the Jaworek patent as applied above, and further in view of Kosono et al. U.S. Patent No. 6,992,140. This rejection is traversed for the following reasons.

The standards and requirements for a proper rejection under Section 103(a) are discussed above and will be considered as repeated here.

The discussion above in regard to the Jaworek patent is applicable to this rejection and, therefore, will be considered as repeated here.

In view of the deficiency of the Jaworek patent under Section 103(a) as explained above, applicants submit that the questions to be answered are (1) whether there is a proper basis upon which to combine the Jaworek and Kosono patents in the manner proposed by the Examiner and, if yes, (2) whether the combination renders applicants' composition to be obvious.

On page 9 of the Office Action, the Examiner states:

> "The reference to Jaworek et al (US 6,777,458) shows essentially what is recited except the employment of the unsaturated polyester product produced from an expoxy allyl ether or a hydroxyl-functionalized allyl ether as recited in claim 12.
>
> The patent to Kosono et al. (US 6,992,140) teaches the manufacture of an unsaturated polyester using an epoxy allyl ether at column 2 (lines 37-49). The resin is also shown at column 8 (lines 41-57), Reference Example 2."

The Examiner then concludes on page 9 that:

> "The employment of the unsaturated polyester taught by Kosono et al in the composition of Jaworek et al would have been an obvious modification to an artisan at the time the invention was made."

Applicants submit that the present invention is not rendered obvious by the cited combination of patents as set forth by the Examiner. Applicants submit that the Examiner has not provided a proper basis upon which these references would be combined by a person having ordinary skill in this art. With regard to the lack of a proper basis, applicants refer to *In re Geiger*, 2 USPQ2d 1276(CAFC 1987), wherein the Court states at page 1278:

> We agree with appellant that the PTO has failed to establish a prima facie case of obviosness. Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, **absent some teaching suggestion or incentive supporting the combination**.
>
> (Emphasis added.)

Applicants again state that the Jaworek patent requires an oxygen depleted atmosphere for curing. Therefore, to add the Kosono patent to the Jaworek patent does not avoid the curing requirement of the Jaworek patent. Therefore, even assuming a proper basis for the combination, the compositions of the present invention (which cure under an air atmosphere at ambient temperatures) are not rendered obvious.

Consequently, applicants request the removal of this rejection under Section 103(a).

In view of the above information, discussion and amendments, applicants maintain that this application is in condition for allowance, which action is requested.

Respectfully submitted,

Thomas A. Hodge
Reg. No. 22,602

BAKER, DONELSON, BEARMAN, CALDWELL & BERKOWITZ, PC
Six Concourse Parkway, Suite 3100
Atlanta, GA 30328
(678) 406-8700
Attorney Docket No. 2785989-000082